Ontario

Ministry of Agriculture,
Food and Rural Affairs

Annual Report 2000 - 2001

of the Agricultural Research Institute of Ontario

http://www.gov.on.ca/OMAFRA/english/research/index.html

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Ontario
Ministry of Agriculture,
Food and Rural Affairs

Annual Report 2000 - 2001
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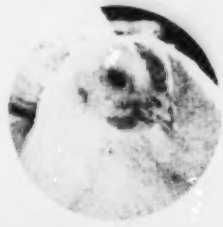
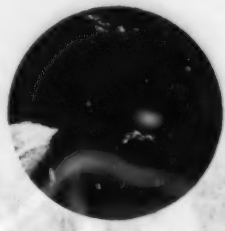
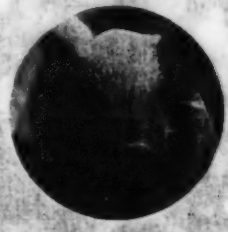

Ministry Vision and Role of ARIO

Ministry Vision

Ontario - an innovative world leader in responsible, sustainable and environmentally sound agriculture, food and rural development.

The ministry core businesses to fulfill this vision are:

- research and technology transfer;
- rural economic development;
- investment and marketing development;
- risk management.

Role of the Agricultural Research Institute of Ontario (ARIO)

The Agricultural Research Institute of Ontario is a corporate advisory body reporting to the Minister of Agriculture, Food and Rural Affairs. It was created under the ARIO Act (1962) with the following specific duties:

- to inquire into programs of research with respect to agriculture, food, veterinary medicine and rural studies;
- to select and recommend areas of research for the betterment of agriculture, food, veterinary medicine and rural studies, and;
- to stimulate interest in research as a means of developing a high degree of efficiency in the production and market ing of agricultural products.

2000-2001 ARIO Members:

James Wadleigh, Chair, January 1, 2000 to December 31, 2000
Graeme Hedley, Chair, beginning January 1, 2001
Deborah Stark, Director of Research
Dorothy Page, Comptroller
Irene Engell and Leah Jones, Recording Secretaries
Bruce Christie
Peter Connell
Terrance Cowan
Anita Gilmer
Janet Horner
Ginty Jocius
Yvon Martel (ex-officio)
Janet Parsons
Murray Pennell
Zaher Qaderi
Dona Stewardson
Tom Van Dusen
James Vidoczy
Jeff Wilson

Chair's Report

Letter from the Chair

Guelph, Ontario
March 31, 2001

The Honourable Brian Cobourn
Minister of Agriculture, Food and Rural Affairs
Legislative Buildings
Toronto, Ontario M7A 1A3

Dear Sir:

I have the honour to submit the thirty-seventh report of the Agricultural Research Institute of Ontario for the period April 1, 2000 to March 31, 2001.

It highlights many of the research accomplishments reported during this past fiscal year and reviewed by members of the Institute. The ARIO is pleased to support the continued high quality research vital to Ontario's agri-food industry, carried out under the OMAFRA - University of Guelph Partnership Agreement. The Institute also acknowledges the valuable contribution of collaborators such as Agriculture and Agri-food Canada, in helping to ensure a continued secure food supply for all Ontarions.

Graeme Hedley
Chair
Agricultural Research Institute of Ontario

Chair's Report

Chair's Report to ARIO

The members of the Agricultural Research Institute of Ontario (ARIO) carry out their responsibilities according to the following mission:

To provide priority and direction for research activities that will contribute to prosperous, competitive and sustainable agriculture, food and rural sectors in Ontario.

Within this mission, they are to make recommendations to the Minister of Agriculture, Food and Rural Affairs (OMAFRA) regarding the ministry's expenditure on research through the Partnership Agreement with the University of Guelph, which commenced April 1/97 as a five year contract. While ARIO members, individually, are advocates of research and very aware of the importance of basic and applied research to maintaining a competitive agriculture and food production system in sustainable rural communities, the ARIO plays no role in establishing the OMAFRA budget for research.

The delivery of the OMAFRA funded research program involves, as organizations, the ARIO, the *Ontario Agricultural Services Co-ordinating Committee, (OASCC)*, OMAFRA and the University of Guelph (U of G) and as individuals, many researchers, technical support staff and administrators. The OASCC committee system is vital to the delivery of the program because it is at this level, within each program, that priorities and emerging issues are identified. The OMAFRA funded research program under the Partnership Agreement is divided into five sub-programs:

- ✓ plants
- ✓ animals
- ✓ foods
- ✓ sustainable rural communities
- ✓ resources management and environment

Each program is reviewed by ARIO on a four year cycle, based on a four year business plan prepared by the U of G. In conducting these reviews, ARIO assesses the plan based on past accomplishments, consistency with OASCC priorities, leverage of external funding and collaboration with researchers at other institutions.

During fiscal 2000/01, ARIO completed the review of the foods program, the sustainable rural communities program, initiated the review of the animal program including pork, poultry, equine, beef, and aquaculture, completed its administrative responsibilities to comply with provincial requirements for agencies, boards and commissions and opened discussions on the review of the OMAFRA - U of G Partnership Agreement which will be in its final year in the upcoming fiscal period. During the year, ARIO visited research facilities at Leamington, Vineland and Guelph.

Chair's Report

Chair's Report to ARIO

Agriculture, food and rural research have seen some major restructuring in recent years, both from a funding and an organizational perspective. The creation of Centres of Excellence at the U of G, in conjunction with Agriculture and Agrifood Canada and collaboration on projects with other universities is a means to share resources and talent to improve overall efficiency. The creation of competitive research funding pools by federal and provincial governments has brought more total funding for agriculture, food and rural research. Investment in the life sciences areas has brought a closer working relationship between food and medical research.

A reduction in annual funding from $54 to $50.5 million to the Partnership Agreement from OMAFRA means that through the combined efforts of OMAFRA, the U of G and ARIO, cost savings must be found. A very high percentage of the OMAFRA funding for research goes to support professional staff, technical staff, operating costs and research station costs.The funding provides research at the following locations:

✓	Alma	aquaculture
✓	Arkell	equine, poultry, swine, environment, field crops
✓	Cambridge	field crops, fruits, vegetables
✓	College d'Alfred	dairy, environment
✓	Elora	beef, dairy, field crops, environment, pest management
✓	Emo	field crops
✓	Guelph	turfgrass, environment
✓	Holland Marsh	muck crops
✓	Kemptville (including Winchester)	field crops, environment, dairy, horticulture
✓	New Liskeard	beef, sheep, seed potatoes, berries, field crops
✓	Ponsonby	dairy, sheep, general animal, field crops
✓	Ridgetown (including Cedar Springs, Huron,Brussels)	field crops, pest management, swine, beef, dairy, environment
✓	Simcoe	fruits, vegetables
✓	Thunder Bay	field crops
✓	Vineland	tree fruits, viticulture, mushrooms
✓	Woodstock	field crops, environment

Addressing cost savings and restructuring leading to a new Partnership Agreement between OMAFRA and the U of G will be a major focus in the upcoming fiscal year.

On behalf of ARIO I want to thank the research analysts at the Innovation and Risk Management Branch, OMAFRA for their dedicated work in preparing ARIO members for each program review, and Dr. Deb Stark and Dr. Larry Moore for their expertise and guidance in managing the delivery of OMAFRA funding to the Partnership Agreement. Our appreciation also goes to Dr. Larry Milligan, Dr. David Hume, Dr. Rick Yada and the host of researchers at the U of G who manage and conduct the research in an efficient, productive and results-oriented program for the benefit of the people of Ontario.

Graeme Hedley
Chair
Agricultural Research Institute of Ontario

Director's Report

Letter from the Director

Guelph, Ontario
March 31, 2001

Mr. Graeme Hedley
Chair
Agricultural Research Institute of Ontario

Dear Sir:

I am pleased to submit a report of the Ontario Ministry of Agriculture, Food and Rural Affairs' agri-food, rural and veterinary research programs supported by the OMAFRA - University of Guelph Partnership Agreement for the year ending March 31, 2001.

Respectfully submitted,

Deborah Stark, DVM
Director of Research, Agricultural Research Institute of Ontario
Assistant Deputy Minister, Research and Corporate Services Division
Ontario Ministry of Agriculture, Food and Rural Affairs

Director's Report

Director's Report to ARIO

Every year brings change to agricultural research. The fiscal year 2000-01 was no exception. Public interest in life sciences, food quality and safety, environmental health, and sustainable rural communities was reflected in growing provincially sponsored research activity in these areas.

The Ontario Government as a whole invested more money in agri-food research through such programs as Healthy Futures for Ontario, Special Research Program, Ontario Innovation Trust and the Ontario Research and Development Challenge Fund. Agri-food and rural research occured at a broad range of locations across the Province - federal Agriculture and Agri-Food Canada research stations, OMAFRA- funded University of Guelph research stations, many other Ontario universities and at industry research facilities.

Industry's increased collaboration with government and university researchers was a positive trend, leading to improved efficiency and more successful transfer of new technology.

During 2000-01, members of ARIO had the opportunity to review and make recommendations concerning the Food and Animal Research Programs of the OMAFRA/University of Guelph Partnership Agreement. The Institute noted the continuing value of the research recommendations of Ontario Research and Services Coordinating Committees. Summaries of the Food and Animal Research Programs, and some of the many research highlights, are included in the following pages of this report.

In 2001-2002, OMAFRA will be renewing the Partnership Agreement with the University of Guelph for research in the years 2002-2007. The Partnership is an important tool to ensure the Province's objectives in agri-food and rural research, education and laboratory services can be met.

I look forward to ARIO's contributions of vision and objectivity to this challenge.

Deborah Stark, DVM
Director of Research, Agricultural Research Institute of Ontario
Assistant Deputy Minister, Research and Corporate Services Division
Ontario Ministry of Agriculture, Food and Rural Affairs

Financial Information

Auditor's Report

To the Director of Agricultural Research Institute of Ontario

We have audited the combined balance sheet of the Research Trust Funds of the Agricultural Research Institute of Ontario ("ARIO") as at March 31, 2001 and the combined statement of revenue and expenses for the year then ended. These financial statements are the responsibility of ARIO's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Research Trust Funds of the Agricultural Research Institute of Ontario as at March 31, 2001 and the results of their operations for the year then ended in accordance with generally accepted accounting principles.

ROBINSON LOTT & BROHMAN LLP

Guelph, Ontario
July 17, 2001

Chartered Accountants

Financial Information

Research Trust Funds

Combined Balance Sheet

As at March 31, 2001

	ARIO (note 3)	GWAP	Enhanced Food Quality and Safety	Food Processing Development	Food Systems 2002	VMAP	Niagara Tender Fruit Lands	Special Research	Swine Medicine	ISFRATT	Food Safety	Healthy Futures	Eliminations	March 31 2001 Total	March 31 2000 Total
	$	$	$	$	$	$	$	$	$	$		$	$	$	$
Assets															
Cash and cash equivalents	13,571,938											36,392,422		49,964,360	48,245,836
Due from ARIO		157,297	434,381		273,006	527,565	4,879,975	4,886,527	8,528	473,715	316,002		(11,956,996)	0	0
Accounts receivable	17,862	2,275	6,283		3,949	182,131	70,587	446,557	123	6,852	542,616	129,363		1,408,598	472,025
Advance										106,717				106,717	100,624
Land	9,793													9,793	9,793
	13,599,593	159,572	440,664	0	276,955	709,696	4,950,562	5,333,084	8,651	587,284	858,618	36,521,785	(11,956,996)	51,489,468	48,828,278
Liabilities															
Due to other research trust funds	11,956,996												(11,956,996)	0	0
Accounts payable	334,917		12,527		51,683	4,515		68,888	1,565			8,980		483,075	651,462
Unclaimed expenditures		29,160	230,568		76,129	4,001		1,143,889		459,116	528,477	19,922,782		22,394,122	2,358,655
Holdbacks			10,450		5,017	499		42,384				23,555		81,905	131,817
Liability for dissolution of program (note 4)							4,950,562							4,950,562	4,722,354
	12,291,913	29,160	253,545	0	132,829	9,015	4,950,562	1,255,161	1,565	459,116	528,477	19,956,317		27,909,664	7,864,288
Fund balance	1,307,680	130,412	187,119	0	144,126	700,681	0	4,077,923	7,086	128,168	330,141	16,566,468		23,579,804	40,963,990
	13,599,593	159,572	440,664	0	276,955	709,696	4,950,562	5,333,084	8,651	587,284	858,618	36,521,785	(11,956,996)	51,489,468	48,828,278

see accompanying notes

Financial Information

Research Trust Funds

Combined Statement of Revenue and Expenses

As at March 31, 2001

	ARIO (note 3)	GWAP	Enhanced Food Quality and Safety	Food Processing Development	Food Systems 2002	VMAP	Niagara Tender Fruit Lands	Special Research	Swine Medicine	ISFRATT	Food Safety	Healthy Futures	March 31 2001 Total	March 31 2000 Total
	$	$	$	$	$	$	$	$	$	$		$	$	$
Revenue														
Grant income	12,520					174,500		1,375,875			872,475		2,435,370	36,150,000
Revenue and royalties	789,168	15,789	2,477						25,309				832,743	643,354
Investment income	82,788	8,925	23,023	3,218	13,052	25,427	241,335	239,053	631	19,790	141	1,975,508	2,632,891	867,041
	884,476	24,714	25,500	3,218	13,052	199,927	241,335	1,614,928	25,940	19,790	872,616	1,975,508	5,901,004	37,660,395
Expenses	715,251	152,768	292,865	10,721	191,328	33,066	13,126	1,028,704	52,747	256,026	13,998	260,925	3,021,515	2,774,047
Liability for dissolution of program (note 4)							228,209						228,209	239,347
Net revenue (expenses)	169,225	(128,054)	(267,365)	(7,503)	(178,276)	166,861	0	586,224	(26,807)	(236,236)	858,618	1,714,583	2,651,280	34,647,001
Fund balance - Beginning of year	1,138,455	136,378	254,394	438,578	146,615	520,317	0	3,021,351	33,893	499,342	0	34,774,667	40,963,990	6,147,719
Net amount transferred from (to) unclaimed Expenditures		122,088	200,080	10,109	175,787	13,503		29,164		(134,938)	(528,477)	(19,922,782)	(20,035,466)	169,270
Inter fund transfer				(441,184)				441,184						
Fund balance - end of year	1,307,680	130,412	187,119	0	144,126	700,681	0	4,077,923	7,086	128,168	330,141	16,566,468	23,579,804	40,963,990

see accompanying notes

Financial Information

Notes to the Financial Statements

for the year ended March 31, 2001

1. NATURE OF BUSINESS

The Agricultural Research Institute of Ontario (ARIO) is a non-profit corporate body reporting directly to the Minister of Agriculture, Food and Rural Affairs. It was created by the ARIO Act (1962) with specific responsibilities over the co-ordination and direction of agricultural research programs in Ontario. These programs relate to a broad range of commodities and disciplines, covering all aspects of the agri-food system. In addition, ARIO manages the Vegetation Management Alternatives Program research fund on behalf of the Ministry of Natural Resources, and all funding is provided by the Ministry of Natural Resources.

Funding for programs supported by the ARIO is available from two sources. The Ontario government, through the Ministry of Agriculture, Food and Rural Affairs, is the primary source of funding. The Ontario Government also provides funding for the competitive research programs. The secondary source of funding is the private sector. Under the ARIO Act, the Institute may accept grants and donations for research. These funds usually come from commercial sources (such as agri-business, marketing boards, and producer associations) and can be either designated for specific projects or non-designated. In addition, with the approval of the Minister of Agriculture, Food and Rural Affairs, the ARIO is able to hold patents and earn royalties on research developments.

All receipts are held in trust by the Director of Research and are allocated in accordance with the terms of the funds.

The research funds are managed by the secretariats to ARIO as follows:

- Agricultural Research Institute of Ontario (ARIO)
- Grape and Wine Adjustment Program (GWAP)
- Enhanced Food Quality and Safety
- Food Processing Development
- Food Systems 2002
- Vegetation Management Alternatives Program (VMAP)
- Niagara Tender Fruit Lands Program
- Special Research
- Swine Medicine Courses
- Ice Storm Forest Research and Technology Transfer (ISFRATT)
- Food Safety
- Healthy Futures

2. SIGNIFICANT ACCOUNTING POLICIES

(a) INVESTMENTS

All investments are carried at the lower of cost plus accrued interest or fair market value and are recorded on the trade date basis.

(b) UNCLAIMED EXPENDITURES

Unclaimed expenditures are defined as the total approved budget for competitive research projects less expenses incurred to date.

Financial Information

(c) INCOME TAXES
ARIO is not subject to income taxes.

(d) RESTRICTIONS ON THE EXPENDITURE OF FUNDS

The purpose, funding, terms and conditions, and duration of each research trust fund are stipulated in the relevant Order-in-Council or Ministry correspondence.

(e) FINANCIAL INSTRUMENTS

Carrying amounts of the organization's financial instruments including cash, accounts receivable, prepaid expenses, accounts payable, unclaimed expenditures and holdbacks approximate fair value due to their short maturities.

3. ARIO RESEARCH FUND

Revenues and expenses related to this fund consist of:

	Designated Funds	Seed Royalty/ U of Guelph Plant Agriculture	Technology Royalty	Unpledged Equity	Total 2001	Total 2000
Grant Income	$ 12,520	$ 0	$ 0	$ 0	$ 12,520	$ 0
Revenue & Royalties	152,241	470,075	166,852	0	789,168	579,524
Investment Income	4,188	22,532	47,225	8,843	82,788	60,453
	168,949	492,607	214,077	8,843	884,476	639,977
Expenses	149,048	514,371	51,340	492	715,251	860,213
Net surplus (deficit) for the year	19,901	(21,764)	162,737	8,351	169,225	(220,236)
Fund balance, beginning of the year	57,698	350,176	603,808	126,773	1,138,455	1,358,691
Fund balance, end of year	$ 77,599	$ 328,412	$ 766,545	$ 135,124	$ 1,307,680	$ 1,138,455

4. LIABILITY FOR DISSOLUTION OF PROGRAM

The Niagara Tender Fruit Lands program was cancelled in July, 1995 after grant income of $3,759,000 had been received and costs of $1,400 had been incurred under agreements, which had been entered into. There have been claims filed against ARIO for breach of contract due to the cancellation of the program. In management's estimate, the funds on hand in the Niagara Tender Fruit Lands Research Trust Fund are sufficient to cover any costs arising from these claims. Any residual funds are expected to be returned to the Ontario government through the Ministry of Agriculture, Food and Rural Affairs.

5. STATEMENT OF CASH FLOWS

A statement of cash flows has not been presented, as it would provide no additional meaningful information.

6. COMPARATIVE FIGURES

Prior year's figures have been reclassified to conform with the current year presentation.

Financial Information

(c) INCOME TAXES
ARIO is not subject to income taxes.

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4. *LIABILITY FOR DISSOLUTION OF PROGRAM*

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5. *STATEMENT OF CASH FLOWS*

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6. *COMPARATIVE FIGURES*

Prior year's figures have been reclassified to conform with the current year presentation.

ARIO Budget

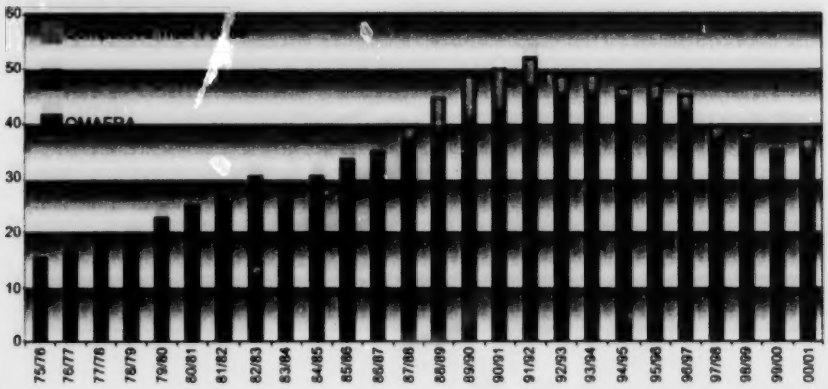
2000-2001 Research Funding

	Ont. Gov't Funding	ARIO Trust Fund Expense
Research Branch	1,587,000	
Univ. of Guelph	34,500,000	565,711*
Agriculture & Rural Div.		
Swine Medicines		51,127
OSHIP**		49,963
Sub total	**36,087,000**	**666,801**
Special ARIO Trust Funds		
Enhanced Food Q & S		364,278
Food Processing Research		11,405
Food Safety	330,000	13,998
Food Systems 2002		382,412
Special Research	1,200,000	1,026,280
Sub total	1,530,000	1,798,373
TOTAL	**37,617,000**	**2,465,174**

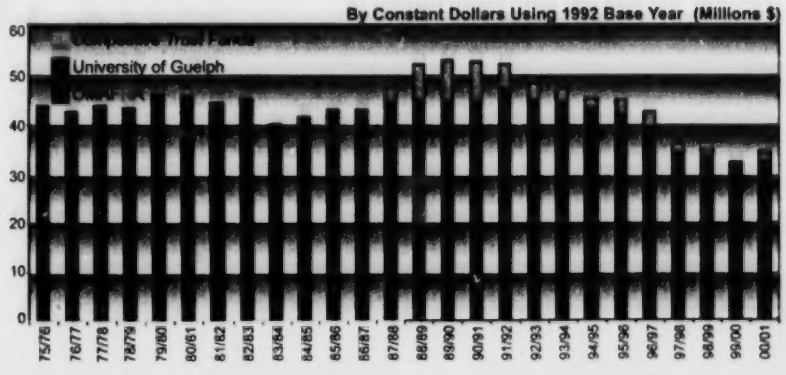
* includes seed and technology royalties
** Ontario Swine Herd Improvement Program

OMAFRA Total Research Expenditures: 1975-1976 to 2000-2001

By Category (Millions $)



By Constant Dollars Using 1992 Base Year (Millions $)



ARIO Research Reviews During 2000-2001

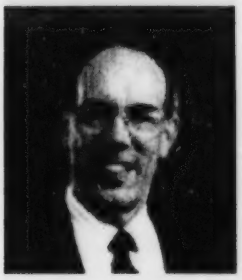
Schedule of Research Reviews:	ARIO Meeting:
Food Research Program 1996-2000 and 2000-2004	April 2000
OMAFRA/U of G Research Agreement (for 1999-2000) Update	August 2000
Sustainable Rural Communities Business Plan 1999-2003	August 2000
Overview / Introduction to Animal Research Program - not available	October and November 2000
Pork Research Program 1997-2001 and 2001-2005	November 2000
Poultry Reseach Program 1997-2001 and 2001-2005	February 2001
Equine Research Program 1997-2001 and 2001-2005	February 2001
Beef Research Program 1997-2001 and 2001-2005	March 2001
Aquaculture Research Program 1997-2001 and 2001-2005	March 2001
Plants Program annual report	March 2001
Resources Management and Environment annual report - not available	March 2001

For more information, contact Dr. Leslie Woodcock of Innovation and Risk Management Branch, Ontario Ministry of Agriculture, Food and Rural Affairs at leslie.woodcock@omafra.gov.on.ca or please write or phone:

Dr. Leslie Woodcock
Innovation and Risk Management Branch
Ontario Ministry of Agriculture, Food and Rural Affairs
1 Stone Rd. West
Guelph, ON N1G 4Y2
Tel. 519-826-4167

OMAFRA/University of Guelph

Partnership Agreement: Research Update for 1999-2000



Presented to ARIO by Dr. Dave Hume,
University of Guelph Research Program Director

In 1999-2000, OMAFRA made transfer payments of $54 million to the University of Guelph. $34 million supported research. In addition, the Ontario Realty Corporation provided $9-10 million for operation and maintenance of the 14 research stations it owns. During the same year, the Province of Ontario provided over $8 million to the University of Guelph in Ontario Research and Development Challenge Fund (ORDCF) and Ontario Innovation Trust (OIT) funding, plus announced $85 million from the Superbuild Growth Fund.

Performance Measures of the Agreement:

1. Increase total funding from outside sources

1995/1996	$32.7M
1996/1997	33.0M
1997/1998	40.8M
1998/1999	38.0M
1999/2000	51.9M

2.Increase total number of organizations providing funding

1998-1999	490
1999-2000	576

3. Increase funding from business and industry

1996-1997	$6.0M
1997-1998	9.9M
1998-1999	12.0M
1999-2000	12.2M

4. Increase number of licenses, patent and royalty agreements

1997-1998	70
1998-1999	121
1999-2000	140

5. Increase royalties from approximately $600,000 in 1997/98 to $1 million per year by 2002

1997-1998	$658,762
1998-1999	704,035
1999-2000	591,966

6. Publish one Publish one peer-reviewed journal paper for each $25,000 in operating funds (approx. 350)

1998-1999	369 + 21 books + 45 chapters in books
1999-2000	540 + 29 books + 16 chapters in books

7. Review five projects for impact of research

Projects within animal species were grouped together. An assessment of beef research was conducted. The benefit-cost ratio was 48:1 and 90% of the benefits accrued to producers. ■